

Mecklenburg County Common Code Defects

Mechanical

Code Defects

- Gas Piping installation incorrect

Code Description

404.1 Prohibited locations. Piping shall not be installed in or through a circulating air duct, clothes chute, chimney or gas vent, ventilating duct, dumbwaiter, or elevator shaft.

404.2 Piping in solid partitions and walls. Concealed piping shall not be located in solid partitions and solid walls, unless installed in a chase or casing.

404.3 Piping in concealed locations. Portions of a piping system installed in concealed locations shall not have unions, tubing fittings, right and left couplings, bushings, compression couplings and swing joints made by combinations of fittings.

EXCEPTIONS:

1. Tubing joined by brazing.
2. Fittings listed for use in concealed locations.

404.4 Piping through foundation wall. Underground piping, where installed below grade through the outer foundation or basement wall of a building, shall be encased in a protective pipe sleeve. The annular space between the gas piping and the sleeve shall be sealed.

404.5 Protection against physical damage. In concealed locations, where piping other than black or galvanized steel is installed through holes or notches in wood studs, joists, rafters or similar members less than 1 inch (25.4 mm) from the nearest edge of the member, the pipe shall be protected by shield plates. Shield plates shall be a minimum of 1/16-inch-thick (1.6 mm) steel, shall cover the area of the pipe where the member is notched or bored, and shall extend a minimum of 4 inches (102 mm) above sole plates, below top plates and to each side of a stud, joist or rafter.

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404.6 Piping in solid floors. Piping in solid floors shall be laid in channels in the floor and covered in a manner that will allow access to the piping with a minimum amount of damage to the building. Where such piping is subject to exposure to excessive moisture or corrosive substances, the piping shall be protected in an approved manner. As an alternative to installation in channels, the piping shall be installed in a casing of schedule 40 steel, wrought iron, PVC or ABS pipe with tightly sealed ends and joints. Both ends of such casing shall extend not less than 2 inches (51 mm) beyond the point where the pipe emerges from the floor.

404.7 Aboveground piping outdoors. Piping installed aboveground outdoors shall be securely supported and located where it will be protected from physical damage. Where passing through an outside wall, the piping shall also be protected against corrosion by coating or wrapping with an inert material. Where piping is encased in a protective pipe sleeve, the annular space between the piping and the sleeve shall be sealed.

404.8 Protection against corrosion. Metallic pipe or tubing exposed to corrosive action, such as soil condition or moisture, shall be protected. Zinc coatings (galvanizing) shall not be deemed adequate protection for gas piping underground. Ferrous metal exposed in exterior locations shall be protected from corrosion. Where dissimilar metals are joined underground, an insulating coupling or fitting shall be used. Piping shall not be laid in contact with cinders.

404.8.1 Prohibited use. Uncoated threaded or socket welded joints shall not be used in piping in contact with soil or where internal or external crevice corrosion is known to occur.

404.8.2 Protective coatings and wrapping. Pipe protective coatings and wrappings shall be approved for the application and shall be factory applied.

EXCEPTION: Where installed in accordance with the manufacturer's installation instructions, field application of coatings and wrappings shall be permitted for pipe nipples, fittings and locations where the factory coating or wrapping has been damaged or necessarily removed at joints.

404.9 Minimum burial depth. Underground piping systems shall be installed a minimum depth of 12 inches (305 mm) below grade, except as provided for in 404.9.1.

404.9.1 Individual outside appliances. Individual lines to outside lights, grills or other appliances shall be installed a minimum of 8 inches (203 mm) below finished grade, provided that such installation is approved and is installed in locations not susceptible to physical damage.

404.10 Trenches. The trench shall be graded so that the pipe has a firm, substantially continuous bearing on the bottom of the trench.

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404.11 Piping underground beneath buildings. Piping installed underground beneath buildings is prohibited except where the piping is encased in a conduit of wrought iron, plastic pipe, or steel pipe designed to withstand the superimposed loads. Such conduit shall extend into an occupiable portion of the building and, at the point where the conduit terminates in the building, the space between the conduit and the gas piping shall be sealed to prevent the possible entrance of any gas leakage. Where the end sealing is capable of withstanding the full pressure of the gas pipe, the conduit shall be designed for the same pressure as the pipe. Such conduit shall extend not less than 4 inches (102 mm) outside the building, shall be vented above grade to the outdoors, and shall be installed so as to prevent the entrance of water and insects. The conduit shall be protected from corrosion in accordance with 404.8.

404.12 Outlet closures. Gas outlets that do not connect to appliances shall be capped gas tight.

EXCEPTION: Listed and labeled flush-mounted-type quick-disconnect devices and listed and labeled gas convenience outlets shall be installed in accordance with the manufacturer's installation instructions.

404.13 Location of outlets. The unthreaded portion of piping outlets shall extend not less than 1 inch (25.4 mm) through finished ceilings and walls and where extending through floors or outdoor patios and slabs, shall not be less than 2 inches (51 mm) above them. The outlet fitting or piping shall be securely supported. Outlets shall not be placed behind doors. Outlets shall be located in the room or space where the appliance is installed.

EXCEPTION: Listed and labeled flush-mounted-type quick-disconnect devices and listed and labeled gas convenience outlets shall be installed in accordance with the manufacturer's installation instructions.

404.14 Plastic pipe. The installation of plastic pipe shall comply with 404.14.1 through 404.14.3.

404.14.1 Limitations. Plastic pipe shall be installed outside underground only. Plastic pipe shall not be used within or under any building or slab or be operated at pressures greater than 100 psig (689 kPa) for natural gas or 30 psig (207 kPa) for LP gas.

EXCEPTIONS:

1. Plastic pipe shall be permitted to terminate aboveground outside of buildings where installed in pre-manufactured anode less risers or service head adapter risers that are installed in accordance with that manufacturer's installation instructions.

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2. Plastic pipe shall be permitted to terminate with a wall head adapter within buildings where the plastic pipe is inserted in a piping material for fuel gas use in buildings.

404.14.2 Connections. Connections made outside and underground between metallic and plastic piping shall be made only with transition fittings categorized as category I in accordance with ASTM D2513.

404.14.3 Tracer. A yellow insulated copper tracer wire or other approved conductor shall be installed adjacent to underground nonmetallic piping. Access shall be provided to the tracer wire or the tracer wire shall terminate above ground at each end of the nonmetallic piping. The tracer wire size shall not be less than 18 AWG and the insulation type shall be suitable for direct burial.

404.15 Prohibited devices. A device shall not be placed inside the piping or fittings that will reduce the cross sectional area or otherwise obstruct the free flow of gas.

EXCEPTION: Approved gas filters.

404.16 Testing of piping. Before any system of piping is put in service or concealed, it shall be tested to ensure that it is gas tight. Testing, inspection and purging of piping systems shall comply with 406.

Disclaimer: There may be other ways to comply with the Code. If so, you are not required to use this method to comply with the Code. You may want to investigate other options, or consult with a design professional identifying an equally code compliant solution.

End Notes

North Carolina Plumbing Code & North Carolina Mechanical Code & North Carolina Fuel Gas Code.
International Code Council
Southern Building Code Congress